

MI-ComPAC

DC-DC POWER SUPPLY UP TO 300W

MILITARY

FEATURES

- Transient protection: 28 Vdc per MIL-STD-704A, MIL-STD 1275A/B/D & DO-160E, 270 Vdc per MIL-STD-704D/E/F
- One, two, or three outputs
- Outputs from 2 to 48 Vdc
- Up to 5 W/in³
- High efficiency
- Remote sense
- ZCS power architecture
- Low noise FM control
- MIL-STD-461C/D/E EMI compliance
- Reverse polarity protection



PRODUCT INFORMATION

The MI-ComPAC is a complete single, dual, or triple output DC-DC power supply that delivers up to 300 W from inputs of 28 Vdc or 270 Vdc.

The MI-ComPAC meets the conducted emissions and conducted susceptibility specifications of MIL-STD-461C/D/E and offers complete input transient, surge, and spike protection to the most severe levels of MIL-STD-1275, MIL-STD-704 and DO-160E.

Reverse polarity protection and over / undervoltage lockout provide additional safeguards against potentially damaging line conditions. The MI-ComPAC also features a master disable.

GENERAL SPECIFICATIONS

At TBP = 25°C, nominal line and 75% load, unless otherwise specified

PARAMETER INPUT	MIN	TYP	MAX	UNIT	NOTE
28 Vdc input modules					
Steady state input	18	28	50	Vdc	
Low line lockout			17.5	Vdc	Automatic recovery
Input spike limit	-600		+600	Vdc	10 µs, 50 Ω per MIL-STD-704A
	-250		+250	Vdc	70 µs, 15 mJ per MIL-STD-1275A/B/D
Input surge limit			100	Vdc	50 ms, 0.5 per MIL-STD-175A/B/D
			80	Vdc	100 ms per DO-160E
Overvoltage shut down	50			Vdc	100 ms automatic recovery
Reverse polarity protection					Shunt diode: input fuse required
Recommended fuse			10 ^[a]	Amps	F03A type
270 Vdc input modules					
Steady state input	125	270	400	Vdc	
Low line lockout			125	Vdc	Automatic recovery
Input spike limit			+800	Vdc	10 µs, 50
	-600		+600	Vdc	100 µs, 15 mJ
Input surge limit			500	Vdc	100 ms, 0.5
Overvoltage shut down	400			Vdc	100 µs automatic recovery
Reverse polarity protection					Shunt diode: input fuse required
Recommended fuse			2 ^[a]	Amps	F03A type

PARAMETER INPUT	MIN	TYP	MAX	UNIT	NOTE
All models					
No load power dissipation		1.5 ^[a]	2 ^[a]	Watts	
Master disable input current ^[b] (Absolute max., 20 mA)	4			mA	Sink; disables all outputs
Inrush current			110	125	% lin Steady state lin, 10 ms
EMC – MIL-STD-461C/D/E					
Input power leads					
Conducted emissions			CE01, CE03, CE07 CE101, CE102		MIL-STD-461C — 1-up MIL-STD-461D — 1-up
			CE101		MIL-STD-461E — 2-up & 3-up
			CS01, CS02, CS0		MIL-STD-461C — 1-up
Conducted susceptibility			CS101, CS114, CS116 CS101, CS114, CS116		MIL-STD-461D — 1-up MIL-STD-461E — 2-up & 3-up
OUTPUT					
Set point accuracy Load / line regulation		0.5	1.0	% Vnom	
		0.2	0.5	% Vnom	LL to HL, NL to 10%
		0.05	0.2	% Vnom	LL to HL, 10% to FL
Output temperature drift		0.01	0.02	%/°C	
Output noise – p-p		1.0	1.5	% Vnom	Whichever is greater
		100	150	mV	20 MHz BW
Output voltage trimming ^[c]	50		110	% Vnom	
Remote sense compensation	0.5			Vdc	
OVP set point	115	125	135	% Vnom	Latching
Current limit	105		125	% Inom	Auto restart
Short circuit current ^[d]	20		130	% Inom	

[a] Per internal module configuration

[b] Multiply minimum x 2 for 2-ups and x 3 for 3-ups

[c] 10 V, 12 V, and 15 V outputs, standard trim range ±10%. Consult factory for wider trim range

[d] Output ranges of 5 V or less incorporate foldback current limiting, outputs of 10 V and above incorporate straight line current limiting







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ISOLATION					
Input to output	4,242			Vrms	
Input to case				Vrms	
28 Vdc input	2,121			Vrms	
270 Vdc input	2,500			Vrms	
Output to case	500			Vrms	
THERMAL					
Efficiency		81		%	
Operating temperature, case			+85	°C	See product grade
Storage temperature			+100	°C	See product grade
Shut down temperature	+90	+95	+105	°C	Cool and recycle power to restart

CONFIGURATION CHART

OUTPUT	POWER	SIZE	WEIGHT	NO. OF MODULES
SINGLE OUTPUTS				
MI-LC 	50 – 100 W	8.6" x 2.5" x 0.99" 219,2 x 64,5 x 25,1 mm	1.2 lbs. (544 g)	1
MI-MC 	150 – 200 W	8.6" x 4.9" x 0.99" 219,2 x 126,0 x 25,1 mm	2.4 lbs. (1248 g)	2
MI-NC 	300 W	8.6" x 7.3" x 0.99" 219,2 x 187,5 x 25,1 mm	3.6 lbs. (1633 g)	3
DUAL OUTPUTS				
MI-PC 	100 – 200 W	8.6" x 4.9" x 0.99" 219,2 x 126,0 x 25,1 mm	2.4 lbs. (1248 g)	2
MI-QC 	200 – 300 W	8.6" x 7.3" x 0.99" 219,2 x 187,5 x 25,1 mm	3.6 lbs. (1633 g)	3
TRIPLE OUTPUTS				
MI-RC 	150 – 300 W	8.6" x 7.3" x 0.99" 219,2 x 187,5 x 25,1 mm	3.6 lbs. (1633 g)	3

Conduction-cooled models available, add "-CC" to the end of the part number. (Consult factory for details)

Input Voltage			Output Voltage			Product Grade	
Nominal	Range	Transient	Z = 2 V	T = 6.5 V^[e]	N = 18.5 V	I = -40°C to +85°C	
2 = 28 Vdc	18 – 50 V ^[b]	60 V	Y = 3.3 V	R = 7.5 V^[e]	3 = 24 V	M = -55°C to +85°C	
5 = 155 Vdc	100 – 210 V	230 V	0 = 5 V	M = 10 V	L = 28 V		
6 = 270 Vdc	125 – 400 V ^[c]	475 V	X = 5.2 V	1 = 12 V	J = 36 V		
7 = 165 Vdc	100 – 310 V ^[d]		W = 5.5 V	P = 13.8 V	K = 40 V		
			V = 5.8 V	2 = 15 V	4 = 48 V		

Output Power / Current				Output Power / Current				Output Power / Current					
Full Size		Half Size		5 V		<5 V		5 V		<5 V			
5 V	<5 V	5 V	<5 V	V =	150 W	30 A		S =	300 W	—			
Y = 50 W	10 A	A = 10 W	—	U =	200 W	—		P =	—	90 A			
X = 75 W	15 A	Z = 25 W	5 A	S =	—	60 A							
W = 100 W	20 A	Y = 50 W	10 A										
V = —	30 A												

[b] 16 V operation at 75% load

[c] These units rated at 75% load from

125 – 150 Vin: Full-size – 5 Vout @

100 W; 2 Vout and 3.3 Vout @ 30 A;

Half-Size – 5 Vout @ 50 W; 2 V and 3.3 V @ 10 A

[d] For use with Vicor's MI-AIM

[e] 75 W max module power for 28 V input

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MECHANICAL DRAWING

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